



## Heat/health warning systems: Development, implementation, and intervention activities

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### Abstract:

There is an increasing awareness that heat is a major killer in many larger urban areas, and many municipalities have taken renewed interest in how they deal with oppressive heat. The implementation of sophisticated heat/health watch warning systems (HHWWS) is becoming more widespread, and these systems are becoming an important mechanism to save lives. One primary consideration in HHWWS development is the knowledge that response to heat varies through time and space. The more elaborate systems consider not only the intensity of heat, but the variability of the summer climate, which is closely related to urban population vulnerability. Thus, thresholds that induce negative health responses vary from one city to another, as well as over the season cycle at any one city. Warning system development involves a clear and consistent nomenclature (e.g. heat advisory, excessive heat warning), coordination between the agency issuing the warning and other stakeholders, public awareness of the system, targeted intervention procedures, and evaluation of effectiveness. This chapter describes these attributes in greater detail. Over the course of recent decades, significant heat waves (e.g., North America in 1980 and 1995, Europe in 1976 and 2003, East Asia in 2004) have resulted in significant loss of life and exposed considerable weaknesses in the infrastructure of heat wave mitigation plans and human adaptation to oppressive weather (Klinenberg 2002). In response to these heat events, many municipalities around the world have taken renewed interest in how they deal with the oppressive heat. In this chapter, we discuss the mechanisms for the development and implementation of heat/health watch warning systems (HHWWS), one of the key methods by which heat events are forecast and their effects are mitigated. We begin by describing the details by which thermal stress is evaluated in current HHWWS and the process by which warning criteria are determined. We then discuss the real-time development of HHWWS along with the “message delivery” to the public, heat mitigation strategies, and checking the effectiveness of HHWWS.

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### Resource Description

#### Early Warning System: ☒

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

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## **Exposure :**

weather or climate related pathway by which climate change affects health

Temperature

**Temperature:** Extreme Heat

## **Geographic Feature:**

resource focuses on specific type of geography

None or Unspecified

## **Geographic Location:**

resource focuses on specific location

Global or Unspecified

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Injury, Other Health Impact

**Other Health Impact:** heat related morbidity and mortality

## **Intervention:**

strategy to prepare for or reduce the impact of climate change on health

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## **Medical Community Engagement:**

resource focus on how the medical community discusses or acts to address health impacts of climate change

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## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified

## **Vulnerability/Impact Assessment:**

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resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

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